

USSR

UDC: 621.376.332(068.8)

SUVOROV, V. N.

"An Amplitude-Phase Discriminator"

USSR Author's Certificate No 259199, filed 28 Oct 68, published 28 Apr 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D92 P)

Translation: This Author's Certificate introduces an amplitude-phase discriminator for superhigh frequencies which consists of measurement and reference channels and four detectors coupled to the channels by means of probes with inductance-capacitance coupling. To increase measurement precision, each of the probes is accommodated by a hole in the common wall between both channels, and a disc in the coupling element has a capacitive projection located above the tap at the grounded end of the loop. N. S.

USSR

UDC 612.824+612.58

SUVOROV, V. V., Physiology Department of the Pedagogic Institute, Tyumen'

"Changes in the Cerebral Circulation During Hypothermia"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,425-1,430

Abstract: A study was made of the cerebral circulation during direct cooling of it. The external integuments of the heads of dogs were cooled. A study was made of the functional changes in the cerebral circulation. The cerebral bascular system is more subject to cold than other regional systems. The magnitude of the cerebral blood supply in animals subject to hypothermia decreases as the temperature decreases. It is 60% at 32° C, about 40% at 28° and drops to 20% of the original value at 22°. The reactivity of the cerebral vascular system is retained at all the indicated temperature levels. Oxygen consumption by the cerebral tissues decreases as hypothermia becomes deeper. In the presence of deep supercooling its utilization drops to 14.12% at a rate of $5.7 \pm 0.3\%$ per degree of cooling. All of the changes are reversible. The adequacy of the changes in tonus of the vessels in response to cold provides for the functional requirements of the nerve elements.

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USSR

UDC 612.14+617-089.583.29

SUVOROV, V. V., Vladimir Institute of Pedagogy

"Changes in the Elastic-Tonic Properties and Peripheral Resistance of the Cerebral Blood Vessels During Hypothermia"

Moscow, Biologicheskiye Nauki, No 3, 1972, pp 43-46

Abstract: Gradual cooling of anesthetized adult dogs to 27 to 28° in the rectum made the cerebral blood vessels more tense, as shown by a diphasic change in the rate of propagation of the pulse waves between the carotid arteries and the brain. An initial decrease was followed by an increase which was associated with a marked decrease in the reactivity and elasticity of the blood vessels. As the brain temperature fell, the peripheral resistance of the vascular system increased due to spasm and reduction in the number of functioning capillaries as well as to growing viscosity of the blood. The changes in the parameters studied are considered adequate to the slowing of the cerebral blood and brain function during hypothermia.

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USSR

UDC 612.82.014.43-08:612.54

SUVOROV, V. V., and NOVIKOV, V. P., Chair of Human and Animal Physiology,
Vladimir Pedagogical Institute imeni P. I. Lebedev-Polyanskiy

"Thermal Deficiency During Cooling of the Brain"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3,
Mar 71, pp 23-26

Abstract: In order to investigate some aspects of the heat balance maintained by mammals, the heads of anesthetized laboratory dogs were cooled with the water-stream Kholod-2F apparatus, while body temperature was being recorded from the scalp, the brain (at depths of 7, 20 and 30 mm) and the rectum (representing internal body temperature). Total body hypothermia was produced in steps of 1°C down to 28°C, indicating that this method was able to raise the total heat loss above total heat production and conservation. A temperature gradient developed between the various areas under investigation, so that at the minimum rectal temperature of 28°C, the brain temperature was 27.1° at 30 mm, 24.6° at 20 mm, and 15.9° at 7 mm, while scalp temperature was 15.4°. As time passed, the thermal index (ratio of the physical to the physiological temperature gradient) decreased, indicating a diminishing heat loss due to smaller heat conduction and greater thermal insulation from

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USSR

SUVOROV, V. V., and NOVIKOV, V. P., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 23-26
reduced tissue metabolism and blood flow. Cranial cooling is an effective
method of producing hypothermia for clinical purposes.

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USSR

UDC 911.3:616.988.25(470.342)

PHELKINA, A. A., KORENBERG, E. I., ZEMSKAYA, A. A., SUVOROVA, A. G., and KOVALEVSKIY, Yu. V.

"A Study of the Virus-Carrying Properties of Ixodes persulcatus P. Sch. in Tickborne Encephalitis Foci of Forests in the Southern European Taiga"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 96-97 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.59)

[No abstract]

1/1

172 029
UNCLASSIFIED
TITLE--APPLICATION OF THE EFFUSION TECHNIQUE FOR THE DETERMINATION OF
PLASTICIZER VAPOR PRESSURE OVER POLYMER SOLUTIONS --U-
AUTHOR--(02)--SUVOROVA, A.I., SERPINSKIY, V.V.
PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--VYSOLOVOL. SOEDIN., SER. A 1970, 12(3), 498-93
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--VAPOR PRESSURE, PLASTICIZER, AMORPHOUS POLYMER, POLYSTYRENE
RESIN, PHTHALATE, CARBOXYLIC ACID ESTER, THERMODYNAMIC CHARACTERISTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1190
STEP NO--UR/0459/70/012/003/0489/0493
CIRC ACCESSION NO--AP0116655
UNCLASSIFIED

2/2 029
CIRC ACCESSION NO--AP0116655 UNCLASSIFIED PROCESSING DATE--30OCT79
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VAPOR PRESSURE OF SEVERAL
PLASTICIZERS OVER AMORPHOUS POLYSTYRENE (I) (OF MOL. WT. 140,000) WAS
MEASURED BY A DIFFERENTIAL EFFUSION METHOD (V. V. SERPINSKI ET AL.,
1969). THE EXPTL. PROCEDURE IS DESCRIBED AT LENGTH. THE VAPOR
PRESSURES OF DI-BU PHTHALATE (II), O-BUO SUB2 C C SUB6 H SUB4 CH SUB2 CH
SUB2 CO SUB2 BU (III), AND DI-BU 2,2 PRIME BENZOPHENONEDICARBOXYLATE
(IV) OVER 1 SOLNS. WERE DETD. AT 80-120DEGREES. THE CHANGES IN THE
CHEM. POTENTIAL (DELTA MU) OF II, III, AND IV DURING DISSOLUTION WERE
CALCD. DELTA MU SUGGESTED THAT THE THERMODYNAMIC AFFINITY OF THE ESTERS
TO I DECREASED IN THE ORDER: II IS GREATER THAN III IS GREATER THAN IV.
FACILITY: URAL. GOS. UNIVER. IM. GOR'KOGO, SVERDLOVSK, USSR.

UNCLASSIFIED

Coatings

USSR

UDC 620.193

SHAVYRIN, V. N., and SUVOROVA, G. S.

"Effect of a Polymeric Coating on the Corrosion Fatigue Strength of Welded Materials of Aluminum Alloys"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 24-27

Abstract: Samples of welded material for the study of corrosion fatigue strength were prepared from clad alloys DI6AT and alloy D20 with a thickness of 1.5 mm. Testing was carried out on a resonance machine with a frequency of 2500 cycle/mm with a constant sign asymmetric cyclic tension. The test base was 10^7 cycles. The samples were placed in a plastic vessel containing a 3% solution of NaCl with 0.1% H_2O_2 . UK-9 cold setting epoxy adhesive was used as the polymeric coating. The sample surface was cleaned with a metal brush and degreased before depositing the adhesive. Samples butt welded by argon arc welding had an adhesive layer. 0.12-0.2 mm thick and 15-18 mm wide, with overlapping reinforced seams. The overlapping material was welded along the layer of moist adhesive with a low-frequency welding machine. The greatest strength was found with adhesive welded materials. Coatings which create a noticeable residual stress of contraction on the metal, as a rule, are brittle and break down easily. However, the use of elasticity materials with the adhesive before

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USSR

SHAVYRIN, V. N. and SUVOROVA, G. S., Fiziko-Khimicheskaya Mekhanika Materialov,
Vol 8, No 2, 1972, pp 24-27

solidification produces a greater durability of the weld. This use of a poly-
meric coating is advantageous since the coating can be deposited on any size
and shape surface, does not require special instrumentation, and can be renewed.

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Corrosion

USSR

UDC: 620.194

SUVOROVA, G. S., and SHAVYRIN, V. N., Scientific Research Institute of Technology and Organization of Production, Moscow

"Effect of Preliminary Corrosion on Fatigue Strength of Joints of Aluminum Alloys"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, No 2, 1971, pp 106-107

Abstract: The authors studied the effect of preliminary corrosion on the fatigue limit of riveted, welded, and glue-welded joints with various anti-corrosion coatings. The specimens were made of clad D16AT alloy 1.5 mm thick. The static short-term strength of welded and riveted joints before and after corrosion was approximately the same. Glue-welded joints showed a decrease in thickness of 15-18% and a tendency to separate at the joint rather than in the base metal as is usual for uncorroded joints. The fatigue limit of welded joints was decreased by up to 30%. Thus, preliminary corrosion affects the fatigue strength of this metal significantly.

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SUVOROVA, I.A.

J-9979

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CLINICAL USE IN CORNEAL BLIND PRESERVED (PP 73-75)
IN A SACHAROSE AND LEVOMYCETIN SOLUTION

By I. A. Suvorova, S. A. Palonov, G. A. Palonov, G. A. Palonov
and S. A. Palonov

It is known that the saccharose-glucose-phosphate solution has been the universally accepted compound for the preservation of cadaveric blood. However, this solution has many shortcomings: its structure is complex, it is not suitable for use in the laboratory of hematology, for no more than 14 days. At the blood conservation laboratory of the USSR Academy of Sciences, the preservation of cadaveric blood was developed (S. A. Suvorova and I. A. Suvorova). It includes saccharose in its full value. It enables us to preserve the blood for a longer period of time than the saccharose-glucose-phosphate solution. Each 60 mg of preserved blood requires 20 mg of the solution.

In vitro experiments showed that with a saccharose solution, concealed hemolysis of the blood showed up after 7-9 days; it gradually increased and by the 24th day did not exceed an average of 0.4 percent. In blood preserved in a saccharose-glucose-phosphate solution (control), hidden hemolysis appeared earlier and, by the end of the study, reached 1.4 percent in terms of the total blood hemolysis. The increase in the number of erythrocytes, characterizing the pre-hemolytic state of the erythrocytes, also took place less intensely in the case of blood preserved according to the new method (compared with 20-25 percent in the control solution).

The values of the maximal and minimal osmotic resistance of the erythrocytes in freshly-prepared cadaveric blood, both in the experiment and the control solution, were similar. In the course of the preservation, changes were detected toward minimal osmotic resistance of erythrocytes which from 0.60 (experiment) and 0.62 (control solution) during the first day of study. No noticeable changes were detected toward the maximal osmotic resistance of erythrocytes. The pH of the solution indicated that the blood preserved in a saccharose solution is less acid than in the control solution. It was noted that in the process of preservation of cadaveric blood, as well as in the canning of donor blood, the potassium content in the plasma increased. According to our data, it increased more intensely in blood preserved in a saccharose-glucose-phosphate solution than in a saccharose solution.

22/10 1964 Medical Journal

USSR

UDC 615.388

SUVOROVA, I. A., PAFOMOV, G. A., and OLDUROVA, S. V.

"Clinical Use of Cadaver Blood Preserved With Sucrose and Levomycetin"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 73-75

Abstract: In the Central Order of Lenin Institute of Hematology and Blood Transfusion, the authors developed a preservative for cadaver blood consisting of 100 g of sucrose and 0.15 g of levomycetin (chloramphenicol) in double distilled water (20 ml of the solution is added to 80 ml of blood). In vitro experiments showed that such blood can be safely stored as long as 28 days. Only one of 74 patients who received transfusions of cadaver blood with the authors' preservative for anemia, shock, gastrointestinal, gynecological or other diseases had a mild reaction. Reports from three other Moscow hospitals (Sklifosovskiy First Aid Institute, Central Institute of Traumatology and Orthopedics, and City Hospital No 53) showed that only 1% of 2,991 transfusions of blood so preserved (250 to 1,500 ml, stored for 7 to 21 days) produced mild or moderate reactions. There were no severe reactions or complications. The effects of the transfusions were beneficial in all cases.

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020
UNCLASSIFIED
TITLE--EVALUATION OF THE VIABILITY OF ERYTHROCYTES OF CADAVER BLOOD BY THE
ISOTOPE METHOD CHROMIUM 51 -U-
AUTHOR--(04)-SUVOVA, I.A., PAFOMOV, G.A., TALSKAYA, I.N., GLOUROVA, S.V.
PROCESSING DATE--04DEC70
COUNTRY OF INFO--USSR
SOURCE--PROBL GEMATOL PERELIV KROVI 15(4): 26-28, 1970.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CADAVER BLOOD, ERYTHROCYTE, BLOOD PRESERVATION, CHROMIUM
ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605015/E08 STEP NO--UR/9080/70/015/004/0026/0028
CIRC ACCESSION NO--AP0140623
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140623

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN ASSESSMENT OF VIABILITY OF ERYTHROCYTES OF CADAVER BLOOD WAS MADE BY LABELING WITH CR PRIMES1. THE NEW METHOD OF PRESERVATION OF CADAVER BLOOD WITH THE SACCHAROSE SOLUTION PROVIDED (ACCORDING TO THE DATA INVIVO) GOOD PRESERVATION OF ITS FORMED ELEMENTS: 24 HR AFTER THE TRANSFUSION TO THE RECIPIENT SURVIVAL OF ERYTHROCYTES OF 10 DAY BLOOD AVERAGED 81PERCENT. FACILITY: LAB. BLOOD PRESERV., CENT. INST. HEMATOL., BLOOD TRANSFUS., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

S

UDC 615.388.073:612.111.3

~~SUVOROVA~~ I. A., PAFOMOV, G. A., TAL'SKAYA, I. N., and OLDUNOVA, S. V., Laboratory of Blood Preservation, Central Institute of Hematology and Blood Transfusion, Ministry of Health USSR, and Laboratory of Blood Transfusion, Institute of First Aid imeni Sklifosovskiy, Moscow

"Estimating the Viability of Erythrocytes of Cadaver Blood by an Isotope Method Involving the Use of Cr⁵¹"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 4, 1970, pp 26-28

Abstract: The viability of erythrocytes of cadaver blood preserved with a sucrose solution containing levomycetin (a method developed by Suvorova) was compared with that of erythrocytes preserved by the older sucrose-glucose-phosphate method. After labeling of erythrocytes with Cr⁵¹, the blood was used, to stimulate healing, in transfusions to recovering patients with fractures of the arm and leg bones. Blood samples were taken from the patients at various times up to 21 days after the transfusion, and on the basis of the radioactivity of the samples, the half-life of the erythrocytes was determined. The viability of erythrocytes preserved by the sucrose method was superior to that of those preserved by the sucrose-glucose-phosphate method. The survival of sucrose-treated erythrocytes 24 hr after transfusion of blood stored for 10 days averaged 81 percent. This

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SUVOROVA, I. A., et al, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 4, 1970, pp 26-28

met the requirement for transfusion blood which states that at least 70 percent of the erythrocytes must survive for 24 hr after transfusion.

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023
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--ELECTRONIC AND INFRARED SPECTRA OF NICKEL, II AND COPPER, II CHELATES
WITH SULFUR CONTAINING SCHIFF BASES -U-
AUTHOR--(02)-ZELENTSOV, V.V., SUVOROVA, K.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 678-86
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRON SPECTRUM, IR SPECTRUM, NICKEL COMPLEX, COPPER
COMPLEX, SCHIFF BASE, MAGNETIC MOMENT, HETEROCYCLIC BASE COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1213
STEP NO--UR/0078/70/015/003/0678/0686
CIRC ACCESSION NO--AP0128631
UNCLASSIFIED

023
CIRC ACCESSION NO--AP0128631
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE IR ABSORPTION AND REFLECTION SPECTRA WERE OBTAINED OF 11 $Ni(II)$ CHELATES OF THE TYPES I AND II WHERE R EQUALS ME, ET, 2, THIENYL, PH; R PRIME1 EQUALS ME, AND X EQUALS S, CL, S, PR, 4, ME. THE SPECTRA AND MAGNETIC MOMENT DETNS. IMPLY THAT THE BROWN DIAMAGNETIC COMPLEXES ARE SQUARE PLANAR AND THAT THE BRIGHT GREEN COMPLEXES HAVE A DISTORTED OCTAHEDRON STRUCTURE. THE EXPT. CONFIRMS SCHIFF'S BASE FORMATION AND CHELATION VIA S, O, AND N. ACCORDING TO VISIBLE RANGE SPECTRA, $Cu(II)$ CHELATES HAVE TETRAGONAL OR LOWER SYMMETRY.

FACILITY: MOSK. FIZ.-TEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 911.3:616.988.25(470.51)

SUVOROVA, L. G., and PCHELKINA, A. A.

"Ixodes Tick Parasites of Small Mammals in Natural Foci of Tickborne Encephalitis in Southern Udmurt ASSR"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 152-153 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.56)

Translation: During 1967-1968 a study was made of the parasite fauna of small mammals of the southern taiga forests of the Malo-Purginskiy rayon in the Udmurt ASSR. Ixodes persulcatus larvae and nymphs are encountered in all species of small forest animals (excluding the weasel) in all forest biotopes. The prime hosts are the common red-backed vole, the northern red-backed vole, the common vole, and the birch mouse. About 2% of the larvae were infected by tickborne encephalitis virus (9 strains were isolated). Imago infectivity was about 8%. Imagoes of I. trianguliceps were found only in the forest vole and common vole. Basic larva and nymph hosts are the common red-backed vole and the common shrew. I. trianguliceps is also found

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USSR

SUVOROVA, L. G., and PCHELKINA, A. A., Vtoroye Acarologicheskoye sovesh-
chaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2.
Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp
152-153 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No
4.36.56)

in all forest biotopes, but the tick population on this species is signifi-
cantly lower than that for taiga ticks. Not a single encephalitis virus
strain was isolated from *I. trianguliceps* (123 imagoes, 686 nymphs, and
597 larvae were studied).

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USSR

TETERIN, G. P., SUYOROVA, L. V.

UDC: 518.5:681.3.06

"Using Statistical Methods and Computers for Mathematical Description of Algorithms for Planning Technological Processes"

V sb. Vychisl. tekhn. v mashinostroyenii (Computer Technology in Machine Building--collection of works), Minsk, 1970, pp 135-153 (from RZh-Kiber-
netika, No 12, Dec 71, Abstract No 12V992)

Translation: A procedure and algorithm are given for statistical analysis of production processes by computer. Methods of multiple linear regression and multiple correlation are used. The program is utilized for mathematical description of algorithms for planning technological processes. Authors' abstract.

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021

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--RADIANT INTENSITY OF FILAMENT LAMPS -U-

AUTHOR--(03)-SMOLKIN, M.M., SUVOROVA, N.N., NIKITICHEVA, A.M.

COUNTRY OF INFO--USSR

SOURCE--SVETOTEKHNICA (USSR), NO. 1, P. 16-17 (JAN. 1970)

DATE PUBLISHED--JAN70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR., MECH., IND.,
CIVIL AND MARINE ENGR
TOPIC TAGS--VISIBLE LIGHT RADIATION, RADIATION INTENSITY, SPECTRAL,
DISTRIBUTION, COLOR, ELECTRON TUBE FILAMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0129

GIRC ACCESSION NO--AP0130891

STEP NO--UR/0311/70/000/001/0016/0017

UNCLASSIFIED

2/2 021
CIRC-ACCESSION NO--AP0130891 UNCLASSIFIED PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PROVIDES A METHOD, BASED
PARTLY ON CALCULATIONS AND PARTLY ON MEASUREMENT, OF DETERMINATION OF
THE RADIANT INTENSITY AND ITS SPECTRAL DISTRIBUTION OF LIGHT AND COLOUR
TEMPERATURE FOR A GIVEN TEMPERATURE OF THE SOURCE. CURVES ARE GIVEN
SHOWING SPECTRAL DISTRIBUTION OF RADIANT INTENSITY OF IODINE LAMP AND
THE DEPENDENCE OF LIGHT INTENSITY, RADIANT INTENSITY OF THE BULB AND THE
FILAMENT ON THE POWER AND COLOUR TEMPERATURE. THE RESULTS OF THE
MEASUREMENT SHOW RADIANT INTENSITIES OF A WHOLE SERIES OF LAMPS RATED
25-1500 W AND ARE IN CLOSE AGREEMENT WITH THE CALCULATED RESULTS.

UNCLASSIFIED

USSR

SHATKO, G. P., SUVOROVA, O. A.

UDC 621.793.3:669.248

"Effect of Molybdate Ions on the Process Rate and Utilization Factor of Hypophosphite During Chemical Nickel Plating"

V sb. Khimiya i Khim. tekhnol. (Chemistry and Chemical Technology -- collection of works), Vyp. 11, Alma-Ata, 1971, pp 45-51 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L329)

Translation: As a result of an investigation of the concentration of molybdate ions (from 0.0027M to 0.018 M) on the process rate (for pH 12-12.5) and a use coefficient of hypophosphite in an alkaline glycocoll electrolyte it was established that with a variation in concentration, the percentage content of Mo varies (from 1.7 to 6.7%) and the concentration of phosphorus varies (from 7.4 to 4.6%) in the precipitates; the precipitation rate and the use coefficient of the hypophosphite decrease (from 86 to 35%) for high I with an insufficient excess of alkali when dark precipitates are formed. It is proposed that the inhibiting effect of the molybdate ions arises from passivation of the catalytic surface of the Ni as a result of the formation of intermediate stages of its incomplete reduction. In the case of formation of bright precipitates, an increase in the hypophosphite decomposition rate constant is observed in connection with a drop in the hypophosphite use coefficient. The reduction of MoO_4^{2-} takes place at the expense of electrons according to the mechanism of

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USSR

SHATKO, G. P., et al., Khimiya i khim. tekhnol., Vyp. 11, Alma-Ata, 1971, pp 45-51

A. A. Nikiforova and G. A. Sadakov since the hypophosphite use coefficient does not increase but, on the contrary, decreases.

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- 11 -

USSR

UDC 621.525

VASIL'YEVA, V. D., PATEPALOV, YU. N., and SUVAOROVA, S. Y., Central Scientific Research Institute for Complex Automation

"A Pneumatic Zone Indicator Device"

USSR Author's Certificate No 372560 kl G 06 g/500, filed 30 Dec 70, published 27 Apr 73 (from RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, Abstract No 11 A 388P)

Translation: The authors propose a pneumatic zone-indicating apparatus containing single-membrane comparison elements, the blind chamber of the first of which is connected to the first input channel of the device, while the flow-through chamber is connected to the second input channel; an amplifier based on a single-membrane element whose blind chamber is connected through a choke to the atmosphere and to the nozzle of the second comparison element. The nozzle is connected to the output channel of the device and through a choke to the supply source.

To extend the functional capabilities of the apparatus, the blind chamber of the second comparison element is connected with the nozzle of the first comparison element and through a choke to the third input channel, while the flow-through chamber is connected to the second input channel of the device. One illustration.

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USSR

UDC 62-525 : 681.3-182

VASIL'YEVA, V. V., POTEPALOV, YU. N., and SUYEROVA, S. V. National All-Union
Central Scientific Research Institute of Integrated Automation

"Pneumatic Logic Unit"

USSR Authors' Certificate No 337774, Cl. G 06d 1/04, filed 22 Jun 70, published 5 May 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 15, 5 May 72, p 177)

Abstract: The device contains one output and two input channels; one output and two input single-membrane elements with a closed and a flow-through chamber in each; a throttle for discharge into the atmosphere, connected to the closed chamber of the output element; and a feed throttle connected to the output channel of the unit and the spring-actuated flow-through chamber of the output element. It is unique in that, in order to simplify the design, the input channels are cross-connected to the flow-through chamber of one input element and the spring-actuated closed chamber of the other input element, and the nozzles of the flow-through chambers of the input elements are connected to the closed chamber of the output element.

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-5 -

UNCLASSIFIED
TITLE--CDCK OF RUSSIAN LEATHERS AND MEASURES FOR REDUCING IT -U-
AUTHOR--(05)--ARBUZOV, S.V., GORODINSKIY, L.L., MIROMOV, F.V., SUVOROVA,
V.P., SUCHKOV, V.G.
COUNTRY OF INFO--USSR
SOURCE--KOZH. GBUV. PROM. 1970, 12(3), 46-51
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LEATHER, SYNTHETIC OIL, SPECIALIZED COATING
CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1735
CIRC ACCESSION NO--AP0125356
STEP NO--UR/0498/70/012/003/0046/0051
UNCLASSIFIED

CIRC ACCESSION NO--AP0125356
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. MEASURES INCLUDE REDUCING THE TEMP. AND DURATION OF MANY OPERATIONS, ESP. FOR BACTERIAL AND IMPORTED RAW HIDES (THE SOFTENING PROCESS WAS ELIMINATED FOR THEM); ELIMINATING NA SUB2 SO SUB3 IN THE ALKALI SOAKING BATH; USING AN OP TYPE EMULSIFIER IN THE DECALCIFYING BATH; USING ACID BLACK S AND FIXER F DURING DYEING AND FIXER F DURING OILING; SALT TREATING INSTEAD OF PICKLING TO HARDEN THE DERMA AND FACE LAYER, ESP. OF BACTERIAL AND IMPORTED STOCKS; LOWERING AIR TEMPS. DURING DRYING; INCREASING THE AMT. OF SYNTHETIC OIL IN MIXTS. WITH FISH OIL; AND COATING WITH ACRYLIC EMULSIONS.

UNCLASSIFIED

USSR

SUVOROVA, Yu. V. (Moscow)

UDC 539.374

"The Propagation of a Load Pulse Within a Nonlinearly Hereeditary Material With Lagging Yield"

Moscow, *Mekhanika Tverdogo Tela*, No 3, May-Jun 73, pp 87-91

Abstract: Consideration is given to the propagation of a load pulse in a semi-infinite rod of a material with the following nonlinearly hereditary equation of state:

$$\varphi(p) = \sigma + \int_0^t K(t-\tau) \sigma(\tau) d\tau \quad (1)$$

Here $\sigma = \varphi(p)$ is the equation of instantaneous curved deformation, $\varphi(0) = \sigma_0$ is the true dynamic yield point at an infinitely great rate of deformation. This equation of state, and examples of its application, are discussed in detail. Consideration is also given to the propagation of an overstress wave in media with lagging yield, and the behavior of the solution in the region behind the wave front during the time that the wave is elastic and while the plastic wave has not yet arrived. The propagation of the plastic wave in a medium, the material of which can be described by equation (1),

USSR

SUVOROVA, Yu. V., Mekhanika Tverdogo Tela, No 3, May-Jun 73, pp 87-91
is described and the general pattern of elastoplastic waves is presented.
1 figure. 4 references.

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Rare Metals

USSR

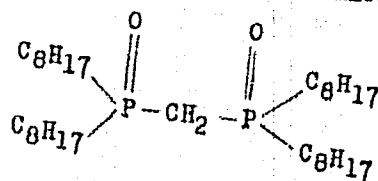
UDC 669.35/86.3

S
SUVOROVSKAYA, N. A., and KUZNETSOVA, YU. S., Moscow

"Extraction of Rare-Earth Metals by Tetraoctylmethylenediphosphine Dioxide"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp 88-90

Abstract: This article presents investigations of the nature of distribution of some rare-earth metals during their extraction by solutions of tetraoctyl-methylene-di-phosphine dioxide (DTOMDF) of the following structure:



and synthesized from $(\text{C}_8\text{H}_{17})_2\text{P}(\text{O})\text{CH}_2\text{Cl}$ and $(\text{C}_8\text{H}_{17})_2\text{POC}_2\text{H}_5$. A study is made of the extraction of rare-earth metals from diluted solutions depending on the concentration of nitric acid, ammonium nitrate, and rare-earth metals using DTOMDF solutions in kerosene. DTOMDF is more effective in relation to rare-earth metals than trioctylphosphineoxide solutions. It was established that DTOMDF is a very

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USSR

SUVOROVSKAYA, N. A., et al, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp 88-90

effective extracting agent for rare-earth metals which can be used for their recovery from weak solutions with high extraction indicators and simultaneous concentration of metal, a fact which is particularly significant during processing of ore with a small content of rare-earth metals.

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UNCLASSIFIED
TITLE--HARDENING OF METALS BY HOT WORKING WITH A VARIABLE DEFORMATION
VELOCITY -U-
AUTHOR--(03)-SUYAROV, D.I., LEL, R.V., AKS, V.YU.
PROCESSING DATE--13NOV70
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V. U. Z., TSVETNAYA MET., 1970, (1), 130-135
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL HARDENING, BIBLIOGRAPHY, HOT ROLLING, METAL DEFORMATION,
DEFORMATION RATE, IMPACT LOAD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0530
CIRC ACCESSION NO--AP0124225
STEP NO--UR/0149/70/000/001/0130/0135
UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0124225
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE RELATIVE MERITS OF TWO
FUNDAMENTALLY DIFFERING HYPOTHESES REGARDING THE HARDENING OF METALS BY
HOT ROLLING AND OTHER FORMS OF HOT WORKING WITH A VARIABLE DEFORMATION
VELOCITY ARE DISCUSSED. THEORETICAL AND EXPERIMENTAL ANALYSES INDICATE
THAT THE BETTER HYPOTHESIS IS THAT IN WHICH THE METAL IS REGARDED AS A
'HEREDITARY' MEDIUM, THE RELATION BETWEEN THE DEFORMATION AND
DEFORMATION RESISTANCE DEPENDING ON THE DEFORMATION VELOCITY IN A MANNER
EXPRESSED BY AN INTEGRAL EQUATION OF THE WALTER TYPE. THE PRACTICAL
APPLICATION OF THIS HYPOTHESIS IS CONSIDERED.

UNCLASSIFIED

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002203220007-3

FILE--HOT PLASTIC DEFORMATION OF TECHNICAL IRON AND LOW CARBON STEEL -U-
UNCLASSIFIED
AUTHOR--SUYAROV, D.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970 13(2), 75-9
DATE PUBLISHED--70
PROCESSING DATE--16OCT70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--PLASTIC DEFORMATION, IRON, LOW CARBON STEEL, METAL ROLLING,
THERMAL EFFECT, METAL CRACKING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1774
CIRC ACCESSION NO--AT0115603
STEP NO--UR/0148/70/013/002/0075/0079
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002203220007-3"

024
CIRC ACCESSION NO--ATO115603 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PLASTICITY OF TECH. IRON (C
0.008-0.009, MN 0.0037-0.0053, SI 0.0010-0.013, P 0.017-0.024, S 0.003-
0.004, N 0.024-0.032, O 0.005-0.01, AND FE 99.93-99.94WT.PERCENT) AT
900-1000DEGREES WAS STUDIED BY THE METHOD OF HOT TORSION TO EXPLAIN
CRACK FORMATION DURING HOT DEFORMATION. A SIMILAR TO 900DEGEES ALPHA
IRON IS A FACTOR OF SIMILAR TO 2 SOFTER THAN GAMMA IRON, SO THAT GAMMA
IRON AT 800DEGREES HAD THE SAME RESISTANCE TO DEFOMATION AS GAMMA IRON
AT 1000DEGREES. THE TECH. IRON AT 900-1000DEGREES IS IN A BIMETALLIC
STATE WITH SHARPLY SEPD. REGIONS OF ALPHA IRON AND GAMMA IRON WHILE
THIN LAYER ON THE SURFACE IS TRANSFORMED RAPIDLY INTO ALPHA IRON
THE CORE REMAINS AS GAMMA IRON. AT HIGHER C CONC. AND WITH INCREASED
AMTS. OF OTHER IMPURITIES OR ALLOYING INGREDIENTS THE INTERVAL OF
ALLTROPIC TRANSFORMATION IS WIDENED AND THE SHARPLY DIVIDED REGIONS OF
ALPHA IRON AND GAMMA DISSAPPEAR TOGETHER WITH THE TENDENCY TO HOT
BRITTLNESS. THE ROLLING OF TECH. IRON AT 600-800DEGREES COMPLETELY
PREVENTED THE FORMATION OF HOT BRITTLNESS. THE FOLLOWING
RECOMMENDATIONS ARE MADE: (1) TO HEAT THE SLABS AND INGOTS TO THE
HIGHEST POSSIBLE TEMP. SO THAT THE RESISTANCE OF AUSTENITE WILL BE
SMALLER THAN THAT OF FERRITE WHICH MAY APPEAR ON THE SURFACE DOWING TO
THE COOLING EFFECT OF THE ROLLS; (2) TO USE SMALL REDN. DEGRESS TO AVOID
SLIPPAGE OF THE ROLLS; (3) TO CARRY OUT THE ROLLING AT HIGH SPEED TO
AVOID THE COOLING OF THE SURFACE.
TSVET. METAL KRASNOVARSK, USSR.
FACILITY: KRASNOVARSK. INST.

UNCLASSIFIED

SUYAZOV, A. V., USIKOV, M. P., KHACHATURYAN, A. G.
UDC: 669.112.342:539.374

"Structural Peculiarities of Low-Temperature Plastic Deformation of Martensite
in High-Carbon Nickel Steel"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 5, Nov 73, pp
1033-1042.

Abstract: Electron microscope study of the Martensite of Fe-Mi-C steel,
deformed at liquid-nitrogen temperature, establishes the existence of deforma-
tion twins in plains $\{112\}_M$, which are not mirror symmetry plains with an
accuracy to the tetragonality of the adjacent twinning and matrix lattices.
Theoretical analysis of the elastic stress state arising in this case can
explain the decrease in tetragonality upon deformation of the martensite.
The change in the tetragonal (011)-(110) doublet of the martensite observed
in earlier works results from the formation of irregular twins on the $\{112\}_M$
plains upon low-temperature plastic deformation.

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Translated for FSTC by Leo Kanner Associates, Redwood City, Ca.

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*Complex Immunization of
Plague Against Aujeszky's
Disease Plague and Erysipelas*

TECHNICAL TRANSLATION

FSTC-HT-23- 1371 - 71

ENGLISH TITLE:
Complex Immunization of Plague Against
Aujeszky's Disease, Plague and Erysipelas

FOREIGN TITLE:
Kompleksnaya Immunizatsiya Parozvrat
protiv bolezni Aueszli, Chumy i Rozni

AUTHOR:
Professor E. I. Pitulin, A. A. Konopatin and G. D.
Soyer

SOURCE:
Vestnik, No. 5, 1971.

USSR

UDC 547.558.1

MASTRUKOVA, T. A., SUYERBAYEV, KH. A., FEDIN, E. I., PETROVSKIY, P. V.,
MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Metal Organic Compounds,
Acad. Sc. USSR

"Diphosphacyclohexadienone"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1195

Abstract: 3,3,5,5-Tetraphenyl-3,5-diphosphacyclohexadienone, m.p. 188.5-192°,
was synthesized by the reaction of 3,3,5,5-tetraphenyl-3,5-diphosphoniacyclohex-
anone with triethylamine. On the basis of IR and NMR ^{31}P data it appeared that
the new compound exists as diphosphacyclodienone substituted at the phosphorus
atom; there were no indications of the existence of diphosphaphenolic structure.

1/1

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USSR

UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, Kh. A., MATROSOV, Ye. I., PETROVSKIY, P. V.,
and KABACHNIK, M. I., Institute of Metal Organic Compounds, Academy of
Sciences USSR

"Acidity and Tautomerism of β -Ketophosphonium Salts. Salts of 3,3,5,5-Tetraphenyl-3,5-diphosphacyclohexenone"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2613-2619

Abstract: Deprotonation of the salts of 3,3,5,5-tetraphenyl-3,5-diphosphoniacyclohexanone leading to the formation of respective 3,5-diphosphacyclohexenone salts was studied. On the basis of IR and NMR spectral analysis it was shown that in crystalline state the monochloride of 3,3,5,5-tetraphenyl-3,5-diphosphacyclohexenone contains an acylphosphinethylene system of bonds. Tetraphenyl borate however shows a phosphoniummethylenephosphorane system with a ketone group. In solutions a prototropic tautomerism is observed of the type $\text{CH}_2\text{-P:CH} \rightleftharpoons \text{CH:P-CH}_2$ which is similar to the tricarbon tautomerism.

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USSR

UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, Kh. A., PETROVSKIY, P. V., MATROSOV, Ye. I.,
and KABACHNIK, M. I., Institute of Metal Organic Compounds, Acad. Sc., USSR

"Acidity and Tautomerism of β -Ketophosphonium Salts of 3,3,5,5-Tetraphenyl-
3,5-diphosphoniumcyclohexanone"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-
2625

Abstract: Synthetic methods have been developed for 3,3,5,5-tetraphenyl-
3,5-disphosphoniumcyclohexanone (I) salts. Solutions of 1.52 g tetra-
phenylmethylenediphosphine and 0.86 g symm-dibromoacetone in 30 ml
tetrahydrofuran were slowly added to 90 ml of boiling THF with stirring.
A finely crystalline material was obtained and reprecipitated from hexane-
ethanol to yield the dibromide of (I), m.p. 230-255°C. To obtain the
dichloride of (I), m.p. 264-266, 4.69 g of symm-dichloroacetone in 150 ml
acetonitrile was added to 14.19 g tetraphenylmethylenediphosphine in 950
ml acetonitrile, refluxed for 1.5 hr and cooled to precipitate the product.
Sodium tetraphenylborate in absolute ethanol added to the dibromide of (I)
in absolute ethanol at room temperature with stirring yields the tetra-
phenylborate of (I), m.p. 182-185°C. To obtain the diperchlorate of (I),
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USSR

MASTRYUKOVA, T. A., et al., Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-2625

m.p. 202-204°C, an aqueous solution of sodium perchlorate was added to an aqueous solution of the dichloride of (I). The salts obtained have an enolic structure in the crystalline state; in solutions an enol-ketone equilibrium is established.

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USSR

UDC 547.461

MASTRYUKOVA, T. A., SHIPOV, A. E., SUYERBAYEV, Kh. A., and KABACHNIK, M. I.,
Institute of Metal Organic Compounds, Acad. Sc. USSR

"Synthesis of Some New Potential Myorelaxants"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 8, No 4, Apr 72, pp 681-682

Abstract: Reaction of succinyl dichloride with glycine or sarcosine ethyl ester yields diethyl esters of succinyldiglycine or succinyldisarcosine, which can be transesterified to 2-dimethylaminoethyl esters using 2-dimethylaminoethanol, and finally after a treatment with dimethyl sulfate or methyl bromide, they yield cholinec esters. Reaction of N,N'-disuccinylethylenediamine with ethylene bromohydrin in presence of dicyclohexylcarbodiimide yields its di-(2-bromoethyl) ester which, after treatment with trimethylamine, gives the dicholine ester of N,N'-disuccinylethylenediamine. All compounds are weak myorelaxants.

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USSR

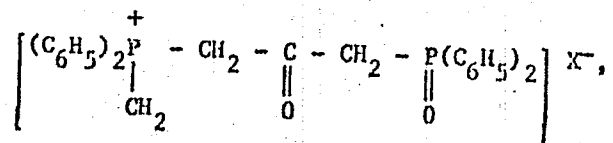
UDC 547.241

MASTRYUKOVA, T. A., SUYERRAYEV, KH. A., PETROVSKIY, P. V. MATROSOV, YE. I.,
Academician KABACHNIK, M. I.

"Acidity and Tautomerism of Some β -Ketophosphonium Salts"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

Abstract: A study of diphenylphosphinyl-substituted β -ketophosphonium salts of the following structure:



where $\text{X} = \text{Cl}^-$, ClO_4^- , BF_4^- , BPh_4^- and CF_3COO^- are anions was made to consider the problem of whether introduction of radicals increasing the CH-acidity but capable of the formation of hydrogen bonds with OH-radicals of enol forms into a molecule of acylphosphonium salt must lead to enolization. Paramagnetic resonance spectra and infrared spectra of the investigated salts are presented and analyzed. In contrast to simple β -ketophosphonium salts, their

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USSR

MASTRYUKOVA, T. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

diphenylphosphinyl-substituted derivatives are capable of enolization in solutions. This property cannot be explained only by the increase in CH-acidity as a result of introducing the diphenylphosphinyl radical. The cause of the enolizability lies in stabilization of the enol form under the effect of the diphenylphosphinyl group. In the case of complex anions enolization does not occur. Thus, for enolization both the $P(O)$ -radical and CF_3COO^- or Cl^- anions must be present.

2/2

USSR

UDC 542.91:547.1'118

MASTRYUKOVA, T. A., ~~SLYERBAYEV, KH. A.~~, and KABACHNIK, M. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Synthesis of Methyl-diphenyl- β -keto- γ -diphenylphosphinylpropylphosphonium Salts"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1216-1217

Abstract: The article describes the synthesis of methyl-diphenyl- β -keto- γ -diphenylphosphonylpropylphosphonium chloride, from which the borofluoride, perchlorate and tetraphenylborate are obtained by exchange reactions. The corresponding phosphorane is obtained by the action of aqueous Na_2CO_3 on the chloride, borofluoride or perchlorate. Phosphonium acetate and trifluoroacetate are obtained from the phosphorane by the addition of trifluoroacetic and acetic acids.

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USSR

UDC 621.315.592(088.8)

VERZIN, I. I., PAYKIN, I. M., POPOV, N. R., SUYETIN, O. N., FURMAN, B. A.

"Device for Compensation of Axial Play of the Priming Rod of Furnaces for Growing Single Crystals"

USSR Author's Certificate No 275412, Filed 1 Dec 67, Published 14 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G479P)

Translation: A device for compensation for axial play of the priming rod of furnaces for growing single crystals contains a system for regulating the speed of the drive which displaces the priming rod. To decrease the axial play in the translational motion of the priming rod occurring during its rotation, an inductive displacement transducer is introduced, the moving part of which is rigidly connected to the priming rod. The stationary part is connected to the carriage on which the inoculation rod is mounted, and the output of which is connected to the input of the speed regulator of the drive for displacing the priming rod.

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USSR

YARYSHEV, G. M., ~~SUYETIN, P. Ye.~~

"Some Results of the Dynamic Nature of Adsorption"

Nekotorye Sledstviya Dinamicheskogo Kharaktera Adsorbtsii [English Version Above], Moscow, 1971, 13 pages (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1375 Dep. by the author's).

Translation: An attempt is made to analyze the adsorbed state and some related phenomena on the basis of kinetic concepts. It is shown that the behavior of a gas in the adsorbed state can be described by the Van-der-Waals equation. It is concluded on the basis of the equation produced that the critical temperature of the matter in the adsorbed state is no less than the three-dimensional critical temperature. The possibility is demonstrated of analyzing the process of condensation (or evaporation) as a process of successive phase transition of molecules adsorbed on the surface of their own liquid.

1/1

USSR

UDC 541.183

YARYSHEV, G. M., and SUYETIN, P. Ye., Ural Polytechnical Institute, Sverdlovsk

"Experimental Determination of the Life of an Adsorbed Atom"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 1, Jan 71, pp 8-11

Abstract: Using the Claysing method, life τ of the molecules Ar, Kr, and Xe adsorbed on the surface of a copper capillary was determined in a wide temperature range: 230-77.2°K. It was shown that $\lg \tau$ is a linear function of $1/T$ at high temperatures, but begins to curve towards the ordinate axis as the temperature is lowered. On the basis of the linear portion of the curve, τ_0 from Frenkel's equation was found to be $1.7-1.8 \cdot 10^{-10}$ sec for all gasses studied. The heat of adsorption of Ar, Kr, and Xe was determined to be 2.85, 3.6, and 4.5 kcal/mole respectively. The relationship between $\lg \tau$ and Q_0/T may be represented by a single curve for all gasses studied, indicating that their heat of adsorption relates directly to the temperature.

1/1

- 4 -

USSR

SUYETIN, P. YE., LOYKO, A. E., KALININ, B. A., and GERASIMOV, YU. F.

"Measuring the Interdiffusion Coefficients of Gases at Low Temperatures"

Minsk, Inzhenerno-Fizicheskii Zhurnal, Vol 19, No 5, Nov 70, pp 933-935

Abstract: The authors measured the interdiffusion coefficients of eight pairs of gases: H_2 -He, H_2 -D₂, H_2 -Ne, H_2 -Ar, He-Ne, He-Ar, D₂-Ne, Ne-Ar in the temperature range of 115-296° K. Included in the article is a drawing of the arrangement used in the research, the diffusion chamber of which was cooled with liquid nitrogen. The temperature was maintained within $\pm 0.3^\circ$ C and the temperature differential along the length of the chamber did not exceed 0.3° C. The samples were checked periodically from the chamber. The authors introduced corrections in their computations for the heat expansion of the diffusion chambers and capillaries, but none for the thermal diffusion ($< 0.1\%$). The measurements were accurate within 1.5% and were determined mainly by the accuracy of measuring the concentration. The diffusion coefficients of the eight pairs of gases were measured in the above range and the data from the pairs He-Ar, He-Ne and Ne-Ar were found to be in good agreement with other data; the temperature dependence of the interdiffusion coefficients of the gases at low temperatures was found for the first time for the pairs

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USSR

SUYETIN, P. YE., et al., Inzhenerno-Fizicheskiy Zhurnal, Vol 19, No 5,
Nov 70, pp 933-935

H₂-Ne, D₂-Ne and H₂-Ar, The authors include a table depicting the experimental
diffusion coefficients at a pressure of 760 mm Hg.

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86

Acc. Nr:

AP0047870

Abstracting Service:

INTERNAT. AEROSPACE ABST. 5-76 UR0057

Ref. Code:

A70-25119 # Measurement of the gas flow rate by the repeated electric breakdown method (Izmerenie skorosti potoka gaza metodom mnogokratnogo elektricheskogo probola). P. E. Sukhin, and P. G. Zykov (Ural'skii Politeknicheskii Institut, Sverdlovsk, USSR). *Zhurnal Tekhnicheskoi Fiziki*, vol. 40, Feb. 1970, p. 355-359. In Russian.

Experimental investigation of the effectiveness and range of applicability of the spark method as applied to the measurement of gas flow rates. It is shown that the method is well suited for studying both stationary and nonstationary gas flows under complex experimental conditions, and makes it possible to obtain velocity diagrams for flows past surfaces of complex shape. The achievable gas flow rates range from 0.3 to more than 100 m/sec. The error of the method is 2 to 3 per cent.

V.P.

REEL/FRAME
19791542

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USSR

UDC 533.15

5
SUYETIN, P. YE., and IVAKIN, B. A., Ural Polytechnic Institute imeni S. M. Kirov

"Experimental Determination of Interdiffusion Coefficients in Gases"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 1, 1970, pp 113-118

Abstract: The article considers the question of the extent to which diffusion coefficients obtained experimentally in the principal type of diffusion device (two volumes of different gases joined by a capillary) can be compared with theoretical Chapman-Enskog formulas obtained in a coordinate system moving at mean mass velocity. A solution is obtained in the stationary case for the distribution of concentration, pressure, and mean mass velocity along the capillary, with and without allowance for diffusion "slip." It is shown that, despite the occurrence of mean mass motion, an analysis of the experimental data can be made on the basis of the usual Fick law and the measurement results can be compared with formulas for the interdiffusion coefficient from strict Chapman-Enskog kinetic theory.

1/1

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USSR

UDC 541.183

YARYSHEV, G. M., and SUYETIN, P. YE., Ural Polytechnical Institute Imeni S. M. Kirov, Sverdlovsk

"The Problem of Physical Adsorption of Gasses on a Solid Body. I. Monomolecular Adsorption With the Consideration of Intermolecular Interaction Adsorbate -- Adsorbate"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 10, Oct 72, pp 2645-2647

Abstract: An isotherm equation of monomolecular adsorption was derived. The equation was qualitatively analyzed. It was shown that the Langmuir equation holds true in the range of high temperatures where it can be applied to cover the experimental data of the adsorption gasses on both the energetically homogeneous and heterogeneous surfaces. At low temperatures and low densities of the particles in the adsorption layer the isotherms obtained from the equation are curved in their initial segments.

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USSR

UDC 541.183

YARYSHEV, G. M., SUYETIN, P. YE., Ural Polytechnical Institute Imeni
S. M. Kirov, Sverdlovsk

"The Problem of Physical Adsorption of Gases on Solid Body. II. Polymolecular
Adsorption Equation With Consideration of the Intermolecular Interaction
Adsorbate -- Adsorbate"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 10, Oct 72, pp 2647-2649

Abstract: The isotherm equation for polymolecular adsorption was obtained. The equation of Huettig and BET represent a small segment of the overall area covered by this equation. Qualitative analysis of this equation was carried out. It was shown that the applicability of the BET equation is limited to the range of high temperatures; at low temperatures it describes the terminal stages of the filling of the monolayer and initial period of the filling of the second layer. In that range the isotherm equation is practically independent of the degree of energetic heterogeneity of the adsorbent surfaces. In other areas the polymolecular adsorption becomes complicated, becoming fully dependent on the energetic structure of adsorbent surface.

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Publications

USSR

Guyetin, V., Compiler

Sportsmen-Podvodnik (Underwater Athletes), Moscow, DOSAAF Publishing House, 1971, 64 pp

Translation: Annotation: The anthology Sportsmen-Podvodnik will come out quarterly. In 1972 you will become acquainted with issues 29, 30, 31, and 32.

To the traditional sections of the anthology: Sport; Equipment and Gear; Medicine and Physiology; Underwater Research; and From the Pages of Foreign Journals, two new sections have been added: Along Underwater Trails and Answers to Readers' Questions.

In the pages of the anthology you will read interesting articles by our leading coaches and sport masters, and you will learn about new equipment and gear and attractive underwater trips and discoveries. In addition, you will find a great deal of other information of various types.

We request that your responses and desires (what you would like to know about in subsequent issues) be sent to the following address: 107,066, Moscow, Novo-Ryazanskaya, 26. DOSAAF Publishing House, editors of sports literature.

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Sport

1/2

USN1

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USSR

UDC 539.12.075.2:681.3

MALAKHOV, A. V., SUYETNOV, O. N.

"Device for Automatic Calculation for the Results of Relative Radiometric Measurements with Background Radiation Subtracted"

Tr. Soyuz. NII Priborostr. [Works of Union Scientific Research Institute for Instrument Building], 1972, No 17, pp 144-153, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1360).

Translation: A specialized arithmetic device and its operating principle for performance of relative difference measurements using a two-channel radiometric apparatus are described. The device allows compensation of the background with constant spectral distribution and variable intensity with high accuracy and calculation of the result of the analysis. The parameters of the device developed are defended and its block diagram and diagrams of individual units are presented. A report is presented on the experimental checking of difference measurements using the device described.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DIFFUSION OF WATER VAPORS THROUGH POLYMER FILMS -U-

AUTHOR--(03)-SHIROKSHINA, Z.V., SLUYKOVSKAYA, N.V., PODODAYEV, A.K.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
48-52

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC-FILM, WATER VAPOR, FLUOROCARBON RESIN, WATERPROOFING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1999/1342

STEP NO--UR/0237/70/000/001/0048/0052

CIRC ACCESSION NO--AP0123300

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERMEABILITY OF WATER VAPOR
THROUGH 2.5-20 MU THICK POLYMER FILMS IS DETERMINED. IT IS SHOWN THAT
32L TYPE FLUORORGANIC POLYMER FILMS ARE MOST HYDROPHOBIC AND LEAST
PERMEABLE FOR WATER VAPOR.

UNCLASSIFIED

USSR

UDC 681.335

SUZDAL', V. S., KOSTENKO, V. I.

"A Harmonic Voltage Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327596, Division H, filed 29 Sep 69, published 26 Jan 72, p 168

Translation: This Author's Certificate introduces a device which converts harmonic voltage to pulse voltage. The converter contains a pulse shaper, a phase detector, a phase modulator and a differentiating network. As a distinguishing feature of the patent, the device is simplified and the stability and sensitivity are improved by making the phase modulator in the form of a slave multivibrator with output of the pulse shaper connected to its signal input. The output of the slave multivibrator is connected to the differentiating network, and the controlling input of the slave multivibrator is connected to the output of the phase detector. A reference signal source is connected to one of the inputs of the phase detector.

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USSR

UDC 582.285.22:633.11:582.001.4

KONOVALOVA, N. YE., SUZDAL'SKAYA, N. V., ZHEMCHUZHINA, A. I., SOROKINA, G. K.,
and SHCHEKOTKOVA, T. V.

"Dynamics of the Race Composition of Agents of Grain Rust in the USSR"

Leningrad, Mikologiya i Fitopatologiya, Vol 4, No 2, 1970, pp 107-122

Abstract: The distribution of brown, yellow, and stem rust of wheat, in hundreds of varieties, and two types of pervasive oat rust throughout the USSR are described, with varying ecological conditions influencing the formation of new types and/or the persistence of the old. A highly virulent rust from the Far East, responsible for destruction of 80% of the crop, had lost its virulence on the West side of the Urals. Mutation depends on many factors, none of which is of similar value in all types. Where the organism passes through an intermediate host, the appearance of new types of very likely: this is rare in asexual stages.

1/1

USSR

IMSHENNIK, V. K., AFANAS'YEV, A. M., GOL'DANSKIY, V. I., MAKAROV, Ye. F.,
PLACHINDA, A. S., SUZDALEV, I. P., Institute of Chemical Physics, USSR
Academy of Sciences

"Investigation of the Dynamic and Static Distortions of Complexes by Using
Gamma-Resonance Spectroscopy"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

Abstract: Gamma-resonance spectroscopy is used to study dilute paramagnetics -- a frozen aqueous solution of FeCl_3 (0.1 M FeCl_3 and 8.3 M HCl) and a hydrated iron-containing sulforesin at a temperature of 90°K in an external magnetic field of 450 oersteds. A computer was used to separate three relaxation times τ_{S_z} corresponding to the Kramers doublets, $S_z = \pm 5/2, \pm 3/2, \pm 1/2$, and also to determine the parameter λ describing departure of the crystal field from the axially symmetric. An attempt is made to relate the quantity λ to static distortion of the complex. From the fact that the three relaxation times are related through two parameters P_1 and P_2 , it is concluded that spin-lattice relaxation is a two-phonon

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USSR

IMSHENNIK, V. K. et al., Fizika Tverdogo Tela, Vol 15, No 9, Sep 73, pp 2656-2660

phenomenon. It is also shown that the relation between P_1 and P_2 gives information on the anisotropy of oscillations of the ligands in the complex. The authors thank Yu. F. Krupyanskiy for valuable advice and comments.

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SUPERPARAMAGNETISM OF ULTRASMALL PARTICLES OF ANTIFERROMAGNETS -U-
AUTHOR--SUZDALEV, I.P. S
COUNTRY OF INFO--USSR
SOURCE--FIZ, TVERD. TELA 1970, 12(4), 588-90
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MOSSBAUER SPECTRUM, PARAMAGNETISM, ANTIFERROMAGNETISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1296 STEP NO--UR/0181/70/012/004/0988/0990
CIRC ACCESSION NO--AP0124947
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124947

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN TERMS OF THE ANAL. OF EXPTL. DATA OBTAINED IN THE INVESTIGATION OF ULTRA SMALL PARTICLES OF THE ANTIFERROMAGNETS, ALPHA FE SUB2 O SUB3 AND ALPHA FE00H, WITH THE AID OF MOSSBAUER SPECTROSCOPY, AN ASSUMPTION IS MADE AS TO THE EXISTENCE OF A CRIT. VOL. WHICH DEPENDS LINEARLY ON TEMP., BELOW WHICH A SUBSTANCE IS FOUND IN THE MAGNETICALLY DISORDERED STATE (PARAMAGNETIC), AND ABOVE WHICH MAGNETIC ORDERING TAKES PLACE. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON POLARIZATION PHENOMENA, ABSOLUTE PROBABILITIES AND ANISOTROPY OF
THE MOSSBAUER EFFECT IN SIDERITE -U-
AUTHOR-(04)-GOLDANSKIY, V.I., MAKAROV, YE.F., SUZDALEV, I.P., VINOGRADOV,
I.A.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 3, PP 760-765
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT POLARIZATION, ANISOTROPY, MOSSBAUER EFFECT, PROBABILITY,
GAMMA QUANTA, IRON ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1733

STEP NO--UR/0056/70/058/003/0760/0765

CIRC ACCESSION NO--AP0103497

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0103497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WHICH ARE SIMILAR TO OPTICAL POLARIZATION EXPERIMENTS HAVE BEEN CARRIED OUT FOR THE FIRST TIME WITH MUSSBAUER GAMMA QUANTA FROM FE PRIME57; UNIAXIAL SIDERITE (FECO SUB3) SINGLE CRYSTALS SERVED AS THE POLARIZER AND ANALYZER. ASYMMETRY OF THE TWO QUADRUPOLE DOUBLET PEAKS WAS FOUND TO DEPEND ON THE AZIMUTHAL ANGLE (α) OF ROTATION OF THE CRYSTAL AXIS OF THE ANALYZER RELATIVE TO THE POLARIZER. ON THIS BASIS THE ABSOLUTE MAGNITUDE OF THE PROBABILITY FOR THE MUSSBAUER EFFECT, F PRIME, IN FECO SUB3 AT ROOM TEMPERATURE AND FOR AN ANGLE BETWEEN THE SIDERITE CRYSTAL AXIS AND THE GAMMA QUANTUM BEAM θ EQUALS 90DEGREES HAS BEEN DETERMINED. FOR θ EQUALS 15, 30, 45 AND 90DEGREES THE PROBABILITIES F PRIME WERE ALSO DETERMINED FROM ASYMMETRY OF THE DOUBLETS AND ON BASIS OF THE TOTAL AREA OF THE TWO GAMMA RESONANT ABSORPTION SPECTRUM PEAKS.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--11SEPT70
TITLE--MOSSBAUER EFFECT STUDY OF THE STRUCTURE OF INORGANIC GLASSES -U-
AUTHOR--BARTENEV, G.M., SUZDALEV, I.P., TSYGANOV, A.D.
COUNTRY OF INFO--USSR
SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 73-78
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--MOSSBAUER EFFECT, GLASS STRUCTURE, GLASS FIBER, TIN

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0234 STEP NO--GE/0030/70/037/001/0073/0078
CIRC ACCESSION NO--AP0106890
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--A00106890
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE STRUCTURE OF INORGANIC GLASSES AND GLASS FIBRES HAS BEEN INVESTIGATED BY MEANS OF THE MOSSBAUER EFFECT. ACCORDING TO MOSSBAUER EFFECT DATA THE MICROSTRUCTURE OF GLASS DIFFERS CONSIDERABLY FROM THAT OF THE GLASS FIBRE. THE POLYMERIC CONSTITUTION OF THE GLASS IS OBSERVED TO UNDERGO CERTAIN STRUCTURAL ORIENTATION DURING DRAWING OF GLASS FIBRES WHICH IS INDICATED BY THE PRESENCE OF AN AXIALLY SYMMETRICAL MOLECULAR FIELD, ASYMMETRY OF ATOM OSCILLATIONS, AND CONSIDERABLY LOWER DEGREE OF MICROHETEROGENEITIES. HEAT TREATMENT OF GLASS FIBRES REMOVES STRUCTURAL ORIENTATION. TIN IONS, LIKE OTHER ELEMENTS OF THE IVTH GROUP OF THE MENDELEEV PERIODIC TABLE, CAN ACT AS WELL AS A GLASS FORMER.

UNCLASSIFIED

Acc. Nr:

AP0038034

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 115-123

AN INVESTIGATION OF SUPERMAGNETISM OF FERROMAGNETIC
PARTICLES BY MOSSBAUER SPECTROSCOPY

Afanas'yev, A. M.; Suzdalev, I. P.; Gen, M. Ya.;
Gol'danskiy, V. I.; Korneyev, V. P.

A theoretical and experimental investigation of supermagnetism of ferromagnetic spherical particles is carried out. It is found that the anisotropy energy (relaxation time) drops to zero for crystals with cubic symmetry at particle dimensions of the order of a certain d_c , and then begins to increase with increase of particle size due to turning of the magnetic moments of separate atoms with respect to each other. It is also shown that this phenomenon is not observed in uniaxial crystals. An investigation by Mossbauer spectroscopy of particles of the ferromagnetic alloy FeNi (37% Ni) with a face centered cubic lattice (the particle size varied between 800 and 120 Å) revealed a pronounced anomaly in the hyperfine structure of 190 and 120 Å particle spectra; this confirms the theoretical dependence of anisotropy energy on the particle size.

REEL/FRAME
19731076

21

03

Welding

USSR

UDC 621.791.7.011.62-418.3

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOVYAROV, B.V. (Candidate of Techn. Sciences), and SUZDALEV, I.V. (Engineer)

"The Process of Fusion in Welding Heavy-Gage Parts"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 71, pp 1-3

Abstract: Production-scale welding of heavy-gage plates and forged pieces in the shipbuilding industry poses problems related to penetration depth and its effect on welding rates. Detailed here are mechanisms of penetration for certain welding techniques. The basic factors involved are: arc pressure, surface tension, weld pool area, and molten metal hydrostatic pressure. An analysis is made of three methods for increasing the arc pressure on the molten metal in the weld crater. The first is based on increasing the mechanical action on the pool and maintaining the area of application constant. An increase in both the arc pressure and penetration depth of 50-100 mm in low-carbon and low-alloy steels may be achieved by raising the welding currents to 5,000-10,000 amp. The method may have limited application due to problems and limitations relative to equipment. The second method calls for reducing the area affected by arc pressure and increasing the depth of fusion without changes in the absolute values of the acting forces. This may be accomplished by the addition of specially formulated fluxes to the weld spot. The third

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USSR

RUSSO, V. L., et al., Svarochnoye Proizvodstvo, No 11, Nov 71, pp 1-3

method lies in increasing the power energy concentration on the heating spot, i.e., increasing the intensity of the heat flux in the spot up to values of violent vaporization of the overheated metals. This will increase the arc pressure on the molten metal in the weld crater. It appears that this technique is correlated with the second method since reducing the spot dimensions will actually increase the heat flux intensity. Analysis of these considerations and those from earlier research on this subject indicates that the most effective method of increasing the mechanical action of the arc on the molten metal in the weld crater relative to area and decreasing the surface tension forces is to increase the energy concentration in the heating spot, for example, by compressing the arc. The mechanisms of penetration in both arc and electron beam welding techniques appear to be the same and differ only quantitatively.

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- 66 -

172 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--PLASTIC GLASS -U-

AUTHOR--(05)-KHOROSHILOVA, T.I., KUTEPOV, D.F., DEVDARIANI, T.V.,
ZASLAVSKIY, N.N., SUZDALEVICH, G.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,437

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHENOL FORMALDEHYDE RESIN, FURFURAL, ACETATE, GLASS, FIRE
RESISTANT MATERIAL, GLASS PLASTIC, REINFORCED PLASTIC, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1768

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137008

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0137008

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PLASTIC GLASS WITH GREATER STABILITY AND LOWERED COMBUSTIBILITY IS PREPD. BY SATG. A GLASS FILLER WITH A BINDER AND HARDENING THE RESULTING MATERIAL WITH 5PERCENT FE PRIME3 POSITIVE SALTS. THIS IS CARRIED OUT WITH A COMPN. CONTG. EQUAL AMTS. OF A 40-70PERCENT SOLN. OF FURFURAL, PHENOL, FORMALDEHYDE ACETATE RESIN IN FURYL ALC. AND AN AQ. SOLN. OF AN ACETATE CONDENSATE OF A PHENOL, HCHO RESIN.

USSR

UDC 581.14:582.285.22:633.13

SUZDAL'SKAYA, M.-V., and ZHEMCHUZHINA, A.I., All-Union Research Institute of
Phytopathology imeni B. Vyazema

"The Role of Sexual Reproduction in the Variability of Oat Crown Rust Agent,
Puccinia coronata CDA. F. Sp. *Avenae* Fraser et. Led."

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 420-424

Abstract: Genetic studies conducted on eight races of *Puccinia coronata* f.
sp. *avenae* Fraser et Led. (oat crown rust agent) showed that six races (226,
231, 235, 238, 240, 284) were heterozygotic in terms of virulence and color
(orange color of uredospores). Dissociation of two races (212 and 239) was
achieved for virulence and uredospore color by self fertilization. The
resultant data confirmed the generally accepted thesis on the heterozygotic
state of the majority of phytopathogen races. For practical purposes the
findings indicate that different races of the pathogenic fungus may be
obtained which may be less virulent.

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USSR

UDC 582.285.22:633.13(47+57)

SUZDAL'SKAYA, M. V., and ZHEMCHUZHINA, A. I., All Union Scientific Research
Institute of Phytopathology imeni B. Vyazema

"The Race Composition of Crown Rust of Oats in the USSR"

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 1, 1973, pp 27-30

Abstract: According to the international register, 260 races of oat crown rust were known in 1970, and they were numbered 201 through 460. An investigation performed in the USSR in 1964-1969 revealed the existence of 44 physiological races in the USSR's main oat regions. Of these, 35 races are specified in the international register (201, 203, 209-212, 226-232, 234-240, 251, 272, 274, 275, 279, 281, 283, 284, 289, 296, 297, 316, 330, 335, and 460) while nine races are new. They have been given conventional designations indicating the year and order of discovery: 1964-1, 1965-1, 1966-1, 1966-2, 1966-3, 1966-4, 1967-1, 1967-2, and 1967-3. Oat strain Santa Fe is resistant to all these nine races. Victoria is susceptible to 1965-1 and Landhafer to 1966-4. Anthony and Trispermia are susceptible to three races, Appler and Bond to four races, Bondvic and Saia to 5 races, and Ukraine to six races. The races most wide spread in the USSR are: 228, 231, 239, and 240. The nine most virulent and dangerous races are: 227, 274, 275, 281, 316, 335, 1964-1, 1967-1, and 1967-3.

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1/3 017
TITLE--SCIENTIFIC SESSION OF PROBLEMS IN MOUNTAIN CLIMATOLOGY -U-
AUTHOR--SUZYUMOVA, G.N.
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA GEOGRAFICHESKAYA, NO 3, 1970,
PP 131-133
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY,
BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--MOUNTAIN, CLIMATOLOGY, CONFERENCE, FOURIER SERIES, HEAT
BALANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0823
CIRC ACCESSION NO--AT0137854
STEP NO--UR/9067/70/000/003/0131/0133
UNCLASSIFIED

2/3 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0137854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCIENTIFIC CONFERENCE ON MOUNTAIN CLIMATOLOGY WAS HELD AT TBILISI DURING THE PERIOD 15-18 OCTOBER 1969. IT WAS CALLED BY THE INTERDEPARTMENTAL SCIENTIFIC COUNCIL OF STUDY OF CLIMATIC AND AGROCLIMATIC RESOURCES OF THE MAIN ADMINISTRATION OF THE HYDROMETEOROLOGICAL SERVICE USSR AND THE COUNCIL ON "COMPLEX EXPLOITATION OF MOUNTAINOUS AREA" OF THE STATE COMMITTEE OF THE COUNCIL OF MINISTERS USSR ON SCIENCE AND TECHNOLOGY. ACADEMICIAN OF THE GEORGIAN SSSR F. F. DAVITAYA AND PROF. O. A. DROZDOV DISCUSSED IN DETAIL THE ROLE PLAYED BY MOUNTAINOUS REGIONS IN THE ECONOMIC LIFE OF THE COUNTRY AND THE PROSPECTS FOR DEVELOPING MOUNTAINOUS AREAS. A REPORT BY I. G. KURDIANI DEALT WITH THE CONSTRUCTION OF ABSOLUTE CLIMATIC MAPS OF MOUNTAINOUS COUNTRIES BY EXPANSIONS OF THE PRINCIPAL METEOROLOGICAL ELEMENTS INTO A FOURIER SERIES. I. I. BORZENKOVA, IN HER REPORT ON THE HEAT BALANCE OF MOUNTAINOUS REGIONS, EMPHASIZED THAT PRESENTLY ACCUMULATED OBSERVATIONAL DATA ON THE RADIATION REGIME IN DIFFERENT MOUNTAINOUS AREAS HAS MADE IT POSSIBLE TO DETECT SOME GENERAL LAWS OF THE CHANGE IN COMPONENTS OF THE RADIATION BALANCE WITH ALTITUDE AND ALSO TO COMPUTE THE VERTICAL GRADIENTS FOR THESE COMPONENTS; IT WAS POSSIBLE TO EVALUATE THE EFFECT OF SLOPES OF DIFFERENT EXPOSURE AND THE CLOSURE OF THE HORIZON ON THE ARRIVAL OF RADIATION IN DIFFERENT RELIEF FORMS. ON THE BASIS OF COMPUTATIONS ATTEMPTS WERE MADE AT A QUANTITATIVE EXPLANATION OF THE PHENOMENON OF VERTICAL CLIMATIC ZONALITY. M. V. ZAVARINA, ET AL. DISCUSSED THE PECULIARITIES OF GLAZE AND FROST PHENOMENA IN MOUNTAINS.

UNCLASSIFIED

3/3 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0137854

ABSTRACT/EXTRACT--STRESSING CONDITIONS IN THE TIEN SHAN, THEY ESTABLISHED A NUMBER OF PATTERNS OF THE DISTRIBUTION OF DENSITY AND INTENSITY OF ICE DEPOSITS ON WIRES. M. I. MISHINA DISCUSSED THE MODELING OF THE DYNAMIC EFFECT OF MOUNTAINS ON THE FIELD OF ZONAL TEMPERATURE IN THE NORTHERN HEMISPHERE AND DEMONSTRATED THAT FOR INVESTIGATING THE EFFECT OF OROGRAPHY ON ATMOSPHERIC PROCESSES IT IS POSSIBLE TO USE AN EXPERIMENTAL MODELING METHOD; IN PARTICULAR, IN THE LABORATORY IT WAS POSSIBLE TO REPRODUCE HEAT EXCHANGE IN A MODEL OF ZONAL CIRCULATION, TAKING INTO ACCOUNT THE OROGRAPHIC IRREGULARITY OF THE EARTH'S SURFACE. MANY OF THE OTHER REPORTS DEALT WITH AGRICULTURAL CLIMATOLOGY. FACILITY:

UNCLASSIFIED

USSR

UDC 669.721.472

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., GENKIN, Ya. N., SHARUNOVA, G. M.,
SVALOV, G. N.

"Development of a Continuous Technology for Production of Magnesium"

Tr. Vses. N-i. i Proyekt. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 48-55. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G196 by the authors).

Translation: Results are presented from combined studies for the development of technology and equipment for production of Mg by electrolysis in a continuous system. This technology calls for a combination of the ordinary individually operating units into a single technological line with centralized charging of raw material, transmission of melt and Mg produced from unit to unit, and centralized removal of electrolysis products. The investigations established the influence of the continuous method of production of Mg on such technological indicators as the yield of Mg per unit current, the specific dc electric power consumption, the quantity of slime removed, etc; the specific features of operation of the equipment were determined. Testing of the technology and equipment for the continuous line was performed on laboratory, large-laboratory, and pilot-plant scales, demonstrating the possibility and promise of the new technological plan.

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USSR

UDC 669.721.372

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SVAZOV, G. N.,
IRTEGOV, N. N., GENKIN, Ya. N., AGALAKOV, V. A.,
SHCHELKHONOGOV, A. A., SABUROV, V. F., and KIRILENKO, I. S.

"Flow Line for Magnesium Production"

Moscow, Tsvetnyye Metally, No 9, Sep 71, pp 36-37

Abstract: An experimental-industrial flow line which uses smelted carnallite as the raw material for the production of magnesium has been established at a Soviet plant. The operation of the flow line is described by reference to a diagram and the distribution of slime (with 20% MgO) by electrolyzers showing the maximum output of slime (up to 60% of its total amount) on the first 3-4 electrolyzers. It is shown that the centralized feeding of diaphragm-type electrolyzers provides a 3-4% increase of magnesium output. To maintain normal temperature conditions and compensate for heat losses, it is necessary to provide for an increase of current intensity and electrolyzer output by 10-12%, in comparison with electrolyzers with individual feeding. Two illustr., three biblio. refs.

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USSR

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SOLYAKOV, S. P., BELKIN, G. I., TATAKIN, A. N., NACHAYEV, V. N., ZOBIN, S. I.,
ZYEY, N. M., IVANOV, A. B., VUKOLOV, V. V., SVALOV, G. N., DEYATKIN, V. N.,
ALEKSANDROV, V. A., GRIBOV, V. I.

"Method of Processing Slimes from Electrolytic Production of Magnesium"

Author's Certificate No 278126, filed 11/02/69, published 18/11/70. (Translated from Referativnyy Zhurnal Metallurgiya, No 2, 1972, Abstract No 2G185).

Translation: In order to use the slime for production of Mg, it is fed from the electrolyzers to chlorinators together with the depleted $MgCl_2$ electrolyte in the form of a pulp containing 1-10% MgO and 5-25% $MgCl_2$. The chlorinators also receive the Cl-Mg raw material and Cl_2 , after which the electrolyte, enriched with $MgCl_2$, is fed to the electrolyzers.

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USSR

UDC 669.721.472(088.8)

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SHARUNOVA, G. M., SWALOV, G. N.,
IRTEGOV, N. N., SABUROV, V. P., SHEHELKONOGOV, A. A., CRUDOVSKIY, N. P.,
and KISELEV, A. V., All-Union Scientific Research and Design Institute of
Aluminum, Magnesium, and Electrode Industry, Bereznikovskiy Titanium-Magnesium
Combine

"Method of Cutting-Off the Electrolyte Supply of a Production Line Magnesium
Electrolytic Reduction Cell"

USSR Author's Certificate No 260905, filed 21 Oct 68, published 5 May 70
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G135 P)

Translation: A method is proposed for switching-off the electrolyte supply
to a production line magnesium electrolytic reduction cell for subsequent
diffusion of scum by increasing the temperature of the electrolyte and the
concentration of magnesium chloride. To avert disruption of the operation
of the production line electrolytic reduction cell at the input into the
cathode cell of the electrolytic reduction cell, shields are placed, which
separate the working space of the electrolytic reduction cell from the elec-
trolyte flow in the distribution canal.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ON THE PROBLEM OF STATISTICAL PARAMETERS CHANGE OF RIVER RUNOFF
WHEN THE HYDROGRAPH IS DIFFERENTLY CUT INTO SECTIONS WITH ANNUAL
AUTHOR-(03)-SVANIDZE, G.G., PIRANASHVILI, Z.A., KILASONIYA, A.N.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 69-77

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RIVER, RUNOFF, HYDROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1760

STEP NO--UR/0050/70/000/006/0069/0077

CIRC ACCESSION NO--AP0125376

UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0125376

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CHANGES OF VALUES OF VARIATION AND

CORRELATION COEFFICIENTS WITH DIFFERENT DATES OF THE BEGINNING OF THE

HYDROLOGICAL YEAR AND VARIOUS FEATURES OF RIVER RUNOFF PROCESS ARE

ANALYSED.

FACILITY: GRUZINSKIY NAUCHNO-ISSLEDOVATEL'SKIY

INSTITUT ENERGETIKI.

UNCLASSIFIED

Molecular Physics

USSR

UDC 669. 355

TABADZE, F.N., Academician of the Georgian SSR Academy of Sciences, SURMAVA, G.G., and SVANIDZE, K.G.,

"Determination of the Diffusion Characteristics of Zinc Into Copper According to the Initial Stage of Whisker Thickening"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 1, Oct 70, pp 53-56

Abstract: Determination has been made of the diffusion coefficient of zinc into the following copper materials of the indicated approximate average diameters" thin whiskers, 5 microns; thick whiskers, 20 microns; deformed whiskers, 6 microns; thin Ulitovskiy microwire, 6 microns; and thick micro-wire, 20 microns, at temperatures of 600, 650, and 700 degrees C. Determination was based on measuring the initial stage of whisker thickening as the zinc diffused from the surface. A known solution to the one-dimensional problem of diffusion from a source with constant concentration was used, exploiting the fact that the cylindrical shape of the specimen has no significance for the initial stage of diffusion when the average path of diffusion is much smaller than the specimen. The diffusion coefficient of the zinc in whiskers was 1-2 orders lower than in thick copper wire. Also measured were the structural factor, which was 6-7 orders lower in whiskers, and 1/2

USSR

TABADZE, F. N., et al, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 1, Oct 70, pp 53-56

the energy of activation, which was 2-3 times lower. These coefficients, based on thickening in the initial stage, coincide with previous findings on data obtained in processing data at areas close to saturation for thin materials (both whiskers and wire), but the differences were great in the case of thicker materials. Coefficients averaged about 3 times higher at 700 degrees than at 600 degrees, except for thick microwire, for which the difference was 10 times as great. The coincidence of the energy of activation diffusion in thin whiskers with the previously reported energy of displacement of vacancies in copper confirms findings elsewhere that new vacancies do not form during diffusion in whisker crystals.

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USSR

ULC 621.382:538.632

ALEKSIDZE, M.A., BEZHANOV, V.G., VINNIKOV, I.L., SVANIDZE, I.V.

"Solution Of Some Boundary Problems During Calculation Of Resistance Of Hall Element"

Tr. In-t sistem upr. AN GruzSSR (Works Of The Institute Of Control Systems. Academy Of Sciences, Georgian SSR), 1971, 10, No 2, pp 47-57 (From RZ:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B364)

Translation: A calculation is made of the input and output resistance of a Hall element of right-angled form, the metal current electrodes of which have an ohmic non-injecting contact with a semiconductor wafer [plating] over all of its length, and metal Hall electrodes -- the same contact with the middle of the lateral faces of this wafer. Both pairs of contacts are realized over the total thickness of the semiconductor wafer. The results are presented in the form of graphs which makes it possible to select (from the point of view of the maximum energy index of the Hall element) the optimum ratio for the sides of the semiconductor wafer and the dimensions of the Hall electrodes. Yu.P.

1/1

USSR

UDC 612.766.1

SVANISHVILI, R. A., Tbilisi State Medical Institute

"Physical Fitness of Athletes"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1973, pp 201-202

Abstract: The author devised a functional test of physical fitness or physical working capacity (PWC) involving a bicycle ergometer (pedaled at the rate of 60 revolutions a minute for 5 minutes). PWC is optimal at a heart rate of 170 beats per minute. In tests of various kinds of athletes (rowers, boxers, soccer players, gymnasts, etc.), PWC₁₇₀ was consistently higher in those completing cyclic movements (e.g., runners) than in those completing acyclic movements (e.g., wrestlers) and it was higher in those engaged in endurance sports than in those requiring speed or strength. It was also substantially higher in athletes than in healthy but untrained individuals. However, no correlation was found between fitness as determined by the bicycle ergometer test and actual performance in competition.

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USSR

UDC 621.311.22:621.3.016.31

CHELIDZE, G. V., LYASHENKO, YU. V., SVANISHVILI, R. N., ZAZIYEV, B. N.

"Problem of Optimizing Electric Load Distribution of a Thermal Electric Power Plant"

Vopr. razrab. i vnedreniya sredstv vychisl. tekhn.-- V sb. (Problems of Development and Introduction of Computers -- Collection of Works), Tbilisi, 1970, pp 250-254 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 Yell9)

Translation: The problem of economical distribution of the electric load between the turbo units of thermal electric power plants can be solved by means of the analog computer based on an algorithm developed utilizing the method of relative increments of heat consumption. The data on the thermal loads of the units and the total electric load of the electric power plant are input to the analog computer, and the characteristics of the expenditure and relative increments of heat consumption are simulated. The distribution of the electric load of the condensation section of the turbo units is calculated by comparing the relative heat increments in the condensation flow of steam after which the values of the optimal electric loads of the units are determined. There is 1 illustration and a 2-entry bibliography.

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172 031
UNCLASSIFIED
TITLE--PARAMAGNETIC RELAXATION IN LITHIUM RADIATION COLLOIDS -U-
AUTHOR--(03)-EKMANIS, YU., VITOLS, A., SVARCS, K.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2), 487-91
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--COLLOID, LITHIUM FLUORIDE, NEUTRON IRRADIATION, EPR SPECTRUM,
LINE WIDTH, PARTICLE SIZE, SPIN LATTICE RELAXATION, IONIC CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1615
CIRC ACCESSION NO--AP0054465
STEP NO--UR/0181/70/012/002/0487/0491
UNCLASSIFIED

2/2 031
CIRC ACCESSION NO--AP0054465 UNCLASSIFIED PROCESSING DATE--16OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIATION COLLOIDS WERE CONSIDERED
OF LI IN REACTOR IRRADIATED LIF CRYSTALS BY EPR METHODS AS WELL AS
ELECTRON MICROSCOPY. THE EPR LINE WITH WIDTH ΔH SMALLER THAN OR
EQUALS TO 50 G CORRESPONDS TO LI COLLOIDS. FOR COLLOIDS WITH A DIAM. D
SMALLER THAN 1-2 μ , A VERY EFFECTIVE MECHANISM OF LINE BROADENING IS
SURFACE RELAXATION. THE PROBABILITY OF SPIN REVERSAL ON THE SURFACE AND
THE TIME OF SPIN LATTICE RELAXATION ARE 10 PRIME NEGATIVE 4 AND 10 PRIME
NEGATIVE 6 SEC, RESP. FACILITY: INST. FIZ., RIGA, USSR.

UNCLASSIFIED

1/2 031
UNCLASSIFIED
PROCESSING DATE--09OCT70
TITLE--FLIGHT SURGEON'S APPRAISAL OF DISORDERS IN THE AUTOMATISM,
CONDUCTION AND EXCITATION FUNCTIONS OF THE HEART -U-
AUTHOR--(03)--BROKHES, L.I., SVAROVSKIY, N.I., GLEBOVSKAYA, N.T.
COUNTRY OF INFO--USSR
SOURCE--VOENNO MEDITSINSKII ZHURNAL, FEB. 1970, P. 69-72
DATE PUBLISHED--FEB70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART DISEASE, EXCITED STATE, MEDICAL EXAMINATION, AIRCRAFT
PILOT, AEROMEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0927
STEP NO--UR/0177/70/000/000/0069/0072
CIRC ACCESSION NO--AP0109084
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109084

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF OBSERVATIONS OF
HEART RHYTHM DISORDERS AMONG INDIVIDUALS FROM A LARGE GROUP OF FLYING
PERSONNEL SUBJECTED TO EXAMINATIONS. NUMERICAL DATA ARE GIVEN FOR THE
OCCURRENCE OF VARIOUS HEART THYTHM DISORDERS AMONG THIS GROUP. SYNUSAL
BRADYCARDIA WAS THE MOST FREQUENT DISORDER, FOLLOWED BY SYNUSAL
ARRHYTHMIA.

UNCLASSIFIED

Optimization

~~EAST GERMANY~~/ USSR

SVECHARNIK D.V., ARTYUNOV O.S., Dr., All-Soviet Scientific-Research Engineering Society of the Instrument Industry (VNITOPribor), Moscow.

"Optimal Process Control Based on the Evaluation of Statistical Data by the Nominal-Optimum Method"

Berlin, Messen-Steuern-Regeln, Vol 13, No 12, December 1970, pp 448-451.

Abstract: The article describes the application of the nominal-optimum method, by which algorithms for an optimal process control can be found from statistical data, to the problem of achieving a maximum economic gain in a production plant from known quality and cost distribution curves. The gist of the method is to appropriately shift the target value with respect to the center value of the tolerance range. It is illustrated on the simplest case, where one-dimensional optimization is required for a process with a single variable parameter. The analysis is carried out in the most general terms and then is illustrated on two specific examples: a rolling mill and a lathe operation. In both cases the product quality parameter has an asymmetrical normal distribution while the cost distribution is symmetrical. The solution of multivariate and otherwise more complex optimization problems by the same method is also discussed. Three bibl. ref. are listed: all Russian (one by the first of above authors). Manuscript date not given.

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USSR

UDC: 621.374

SVECHNIKOV, G. M., SERGEYEV, R. M., TREGUB, I. K.

"Pulse Circuits on Semiconductors and Ferrites"

Moscow, Impul'snyye skhemy na poluprovodnikakh i ferritakh (cf. English above), Voenizdat, 1972, 269 pp, ill. 1 r. (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12G184K [résumé])

Translation: The book examines principles of construction, physical processes and computational relations in pulse circuits on semiconductor devices and ferrites; examples of calculation of fundamental types of circuits are presented. The book is a text for radio officers, and also for students of intermediate and higher military educational institutions.

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Pulse Technique

USSR

UDC: 621.374:621.382.2/.3

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp

Abstract: The purpose of this book is to present information, both qualitative and quantitative, on pulse circuitry involving semiconductors and ferrites. In the process of the exposition, a good many design and computational formulas relating to these circuits are derived. The accent of the book is primarily on the practical, with little attention given to the physical or chemical theory of the semiconductors or ferrites figuring in it.

It is divided basically into four chapters. The first is concerned with transistor pulse circuits, the second with pulse circuits with negative-resistance elements, the third with pulse circuits involving ferrite cores and semiconductors, and the fourth with combination logic circuits of the NOT, AND, and OR type.

A bibliography of 47 titles is appended.

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